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DEPARTMENT OF AGRICULTURE OF THE PROVINCE OF QUEBEC

Horticultural Service — Home Gardens Section

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POTATO GROWING

in Quebec

— BY —

J.-H. LAVOIE,

Chief, Horticultural Service.

Importance of this crop

Although it is a native of South America, the potato however thrives better in Northern temperate countries than in Southern warm regions. In the Province of Quebec particularly, tubers yield larger crops, keep much longer and are of a better grade than those grown by our American neighbours.

Our 1917 crop aggregated 18,158,000 bushels with an average yield of 80 bushels per acre, marketed at an average price of $1.38 per bushel.

Since that time we have increased our crops, but it would still be profitable to double and even treble our production so as to meet all foreign demands and in order to take full advantage of near by markets which might be taken from us by other nations, if we are not in a position to furnish the quantities and grades required.

It would be useless to insist on the importance of tubers as an article of food for man, for starch and alcohol making and as cattle food.

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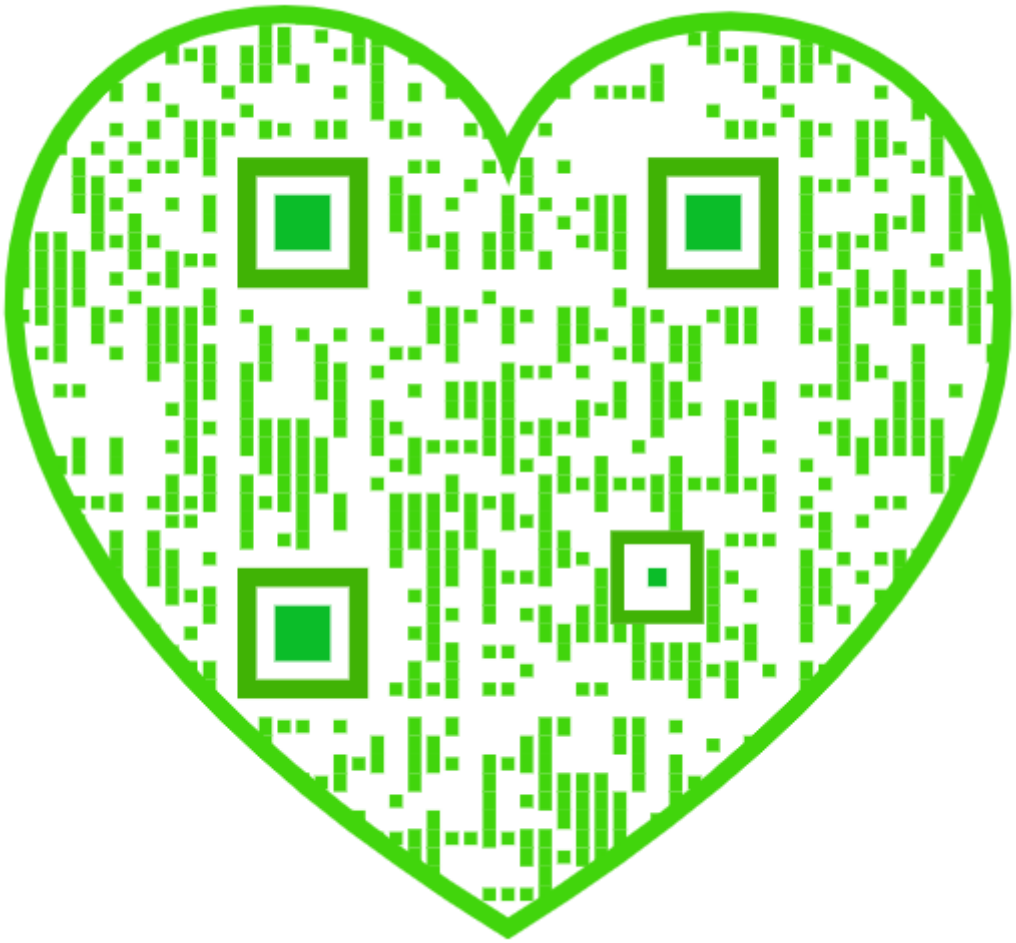

Kinds and Varieties

There are thousands of kinds and varieties of potatoes forming groups of well-defined shapes, such as long, oblong or roundish; of various colours as to their skin which may be white, yellow or red and as to their flesh which is white, yellow or purple.

In Europe a yellow-fleshed potato is preferred for home use; in America, a white-fleshed.

Potato varieties are also classified in order of maturity: early, medium or late.

Varieties most used in Quebec are the following: EARLY: Early Rose, Irish Cobbler; MEDIUM : Carman; LATE : Green Mountain, Gold Coin, Dakota Red.

The following varieties are in demand for export: EARLY : Early Rose, Irish Cobbler; LATE : Green Mountain.

Rotation of crop

A good cropping system should start with a hoed-crop. As the potato thrives in new lands it will succeed admirably on an old sod that will have received an abundant manuring just before being ploughed in the fall—the latter being imperative under such circumstances—or on a clover sod ploughed under in the spring.

As all progressive farmers have a proper cropping system, they will consequently not grow potatoes for several years out of the same ground.

Soil

The potato thrives in [illegible]ay soil, although a light loamy soil, or a soil well [illegible]d with decayed or decaying vegetable matter is preferred. It will not succeed in compact, cold and wet soils which cause it to rot. Besides containing a plentiful supply of barn-manure, ploughed in clover etc., the soil should also be deep and the subsoil properly loosened; because contrarily to what is generally thought, potato roots run to a great depth when the nature of the underground is favourable.

Lands with a compact sub-soil will not yield good crops unless it is loosened with a sub-soil plow.

The best potatoes are those grown in sandy soils abundantly manured, with a permeable subsoil.

Fertilizers.

In view of the present high cost of commercial fertilizers, it is hardly possible for farmers to employ them to restitute to the soil the potash and phosphoric acid it may have been deprived of by previous crops or poor rotation. Nitrogen and lime may however be used, but potatoes will be scabby if too much lime is added.

When the soil is short of this element, it is better to apply same in the shape of carbonate calcium, superphosphate calcium or calcium sulfate (plaster) rather than quick or hydrated lime; however, quantities should not be exceeded or not more than four to five hundred pounds per acre.

The most recommendable is rotten barn-manure. Potato sets should not be planted in a soil that has received fresh manure. Fresh manure, when no other is available, should be spread in the fall prior to ploughing, at the rate of 15 to 20 tons per acre.

Potash, however, is the most useful fertilizer for tubers, and, in this connection, all wood ashes available should be reserved for this crop and spread on the surface.

Preparation of the Soil

This point will never receive too much attention. The potato yield partly depends on the loosening and breaking up of the soil. On an old sod, it is obvious that fall ploughings are imperative as well as on any soils that are more clayey than sandy.

The ploughing will vary with the nature of the subsoil but in all cases it should be as deep as possible, without however, bringing up to the surface more than one inch of earth that will not yet have been submitted to the action of air.

In the following spring, as soon as the soil is warm enough, another ploughing shall be given followed by two good harrowings so as to destroy most of the weeds that might be found. Rotten manures should also be spread at that time.

Time of Planting

Tubers should always be planted as early as possible in the spring. If frosts were still to be feared it would even be more advantageous to cover young vines with earth rather than plant later.

Planting

One should remember that we harvest what we have sown. If degenerated tubers or attacked by diseases, are planted, one should not look to a bounty crop of sound and good potatoes. Potato varieties should also be kept true to type, in as much as possible. When pure varieties are not available, such good tubers whose shape is most in accordance with the type of our variety should be selected.

In order to prevent diseases, seed tubers shall afterwards be disinfected into formalin, i. e., soaked for two hours into a solution of one pint of formalin in 30 gallons of water. When taken out, they are spread in a dry place so as to drain completely.

In order to hasten their germination, these sound tubers of average or large size are spread at least 8 days before the date of planting, on a dry floor where they will receive the indirect and not direct light of the sun. In this way vines will grow strong, stout and green.

As soon as planting time has come, tubers will be cut, providing three good eyes to each set. So as to facilitate the curing of wounds, care should be taken to powder plaster on the sets as fast as they are cut.

When tubers are degenerated, which is known by the presence of a considerable quantity of small eyes on the top of the potato, this part should be removed when cutting the sets.

Sets should not be cut too much in advance. This work should rather be done on the date of planting.

Method of Planting

Potatoes are planted in various ways. Where the ground is infested by couch-grass we would particularly recommend planting sets three feet apart just as is done for corn. This method falicitates the weeding of tubers

on both ways thus contributing not only to making the eradication of weeds easier but also to increase the yield. In this case furrows are opened with a marker whose teeth are disposed three feet apart.

This is the best method to obtain heavy yields. The other method consists in planting tubers in rows three feet apart, with sets 12 to 15 inches distant in the row. One should plant in a ridge on heavy soils and level on light soils.

The depth to plant potatoes depends of the nature of the soil. In heavy soils planting should be rather shallow and a little deeper in light soils. As a rule, tubers are planted 3 or 4 inches deep in heavy grounds and 4 to 6 inches in light grounds, according as the season is dry or rainy.

Cultivation

Frequent weedings at least every eight days are imperative where the soil contains a certain quantity of weeds. Hoeings shall be governed by the weather and the dryness of the soil.

On the other hand, the surface of the soil should never be allowed to crust. The machine used in weeding and hoeing is the horse cultivator. As soon as potato vines are seen at the surface; in a sufficient way to distinguish the rows, they should be given weedings and harrowings. For the first time the cultivation shall be fairly deep and shallower as the plants will grow so as not to touch the shoots and break the roots; this is of capital importance. The last weedings should not be more than 2 or 3 inches deep.

Tubers are produced two or three weeks after flowering and this is the time plants should receive the best attention.

Digging Potatoes

As soon as potato vines are dry and the tubers are enough the latter will be dug.

Whatever may be the way of operation, the most important thing is to dig all tubers without injuring them.

Grading will be made in the field, if the weather permits, taking care to separate all tubers that are best suited

for seed, then those intended for marketing and the others that are only good as cattle food.

They ought to be perfectly dry when stored; tubers injured by diseases or digging will be excluded so as to prevent contamination of the whole crop.

Selection

A progressive farmer makes his own selection of tubers intended for seed. As already stated, when digging potatoes, a selection will be made in the field of those tubers from the heaviest-bearing plants, completely sound and resembling the original type of the variety. They will be stored apart for fear of contamination. Another selection will be made the following spring in order to eliminate misshaped tubers or those attacked by diseases.

Marketing

A similar variety should be grown in the same section, so as to insure profitable sales. When a buyer goes in a certain district, he should be able to load several cars of the same variety and not a car containing several varieties.

Seed potatoes are in great demand and get the highest prices. A larger quantity of this grade of tubers should be produced by our farmers.

Sprayings

Nice stock and heavy yields cannot be hoped for without spraying to destroy insects and disease pests.

The best treatment against all these pests is Bordeaux mixture, prepared with 4 pounds of quick lime slaked in sufficient water to form milk and 4 lbs of copper sulfate dissolved separately in hot water in a wooden receptacle.

When the two stock solutions—the four pounds of quick lime and the four pounds of copper sulfate—are diluted, they are poured, separately, in about 20 gallons of water, after which operation they are again poured simultaneously in another empty barrel of a capacity of 40 gallons, so that complete mixture will be effected at the time of pouring.

In order to be sure of the efficiency of this mixture it is essential that it be stirred hard with a wooden bat immediately after the two solutions are poured. If solutions are not poured together the combination fails and the mixture is useless.

In this state this liquid would control diseases only. To destroy insects such as the Colorado potato beetle, add 8 to 12 ounces of Paris green or 2 to 3 lbs of paste lead arsenate or 1 to 1½ lb. when powder arsenate.

This liquid is afterwards sprayed on potatoes with a sprayer, as often as necessary, but at least every 10 or 12 days, from the time shoots are about 4 to 6 inches high.

In a rainy season this operation will be repeated up to time shoots are ripe. In any case, at least 5 sprayings should be done.

Plants should not be sprayed when wet, or on the eve of a rainfall, but when the foliage is dry preferably, or after a rainfall.

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